

Séminaire d'algèbre, topologie et géométrie

Jeudi 23 mars à 14h

Salle de conférences

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Debarre-Voisin varieties and associated Fano varieties

Despite being one of the building blocks among Kahler varieties with trivial first Chern class, hyperKahler (HK) varieties are difficult to construct. Up to today, there are only a few known deformation types of examples. Moreover, the few known examples of locally-complete deformation families of HK varieties are all associated to some special Fano varieties. Two examples of such HK families are given by the variety of lines on cubic fourfolds and Debarre-Voisin (DV) varieties. Following work by Beauville-Donagi, Hassett, Kuznetsov, etc... there exists a very precise relationship between cubic fourfolds (which are Fano varieties) and their variety of lines at a geometrical, cohomological and derived categorical level; this relation has led to profound conjectures on the rationality of cubic fourfolds. In this talk we will explain what is the Fano variety analogous to cubic fourfolds in the DV case and we will give precise geometrical, cohomological and birational relationship between the Fano and HK geometry in the DV case. This comes from joint works with J. Song and D. Faenzi.